

## An ADS-B derived ATC linked ER System for NextGen Safety, Phase I

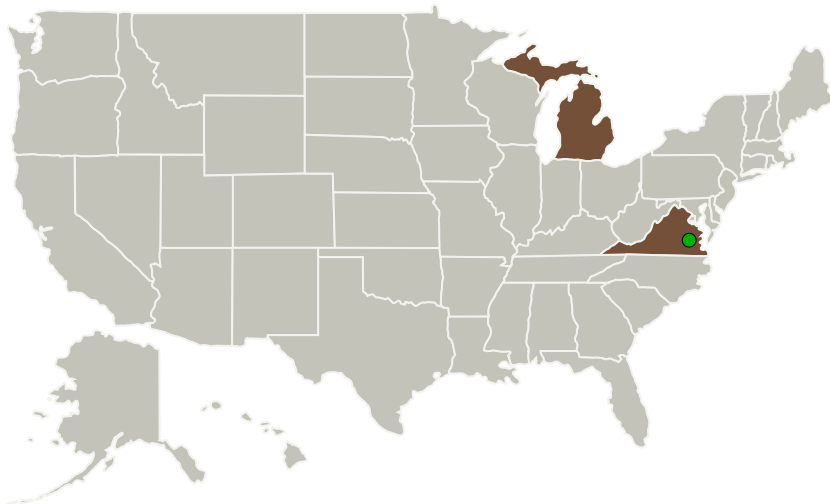
Completed Technology Project (2012 - 2012)



## Project Introduction

Munro offer an innovatiive, intelligent, fully integrated hardware and software cockpit system solution for handling many General Aviation (GA) and UAV emergencies so as to minimize NextGen ATM disruption while saving lives. This ADS-B-ER system will provide GA airplanes and UAVs automated -ER trajectories to the nearest suitable airport avoiding terrain/obstacles, hazardous weather and restricted airspace. The ADS-B-ER will also provide NextGen's ANSP "controllers" with the -ER trajectory via a 911 ADS-B datastream offering collaborative capability. In a GA or UAV emergency or impending emergency this ADS-B-ER datastream will serve as an interactive datalink between airplane and NextGen, providing the safest optimum trajectory option to the flight crew as well as to the FAA and DOD NextGen ANSP controllers for dealing with the emergency so that they are both dealing with the same information base. Within the last month a military UAV went "rogue" and penetrated the Washington ADIZ, pointing to the vital need for our innovative solution. Our demonstration system will be designed to be compatible with the advanced cockpit systems work underway in the NASA LaRC Cirrus airplane and will also serve its UAV testbed needs. It will be available for installation and integration with other systems in NASA's airplanes or UAV and simulator facilities. We will develop the R&D into a unified ADS-B system for commercial deployment in all types of GA airplanes and UAVs thus provide a more consistent safety response compared to today's ATC intense human only response thereby accelerating fleet deployment which is a major FAA concern today.

## Primary U.S. Work Locations and Key Partners

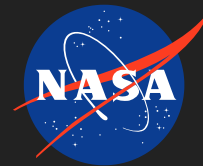


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Organizations Performing Work	Role	Type	Location
Munro and Associates	Lead Organization	Industry	Troy, Michigan
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations	
Michigan	Virginia

## Project Transitions

▶ **February 2012:** Project Start

✓ **August 2012:** Closed out

## Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140321>)

## Organizational Responsibility

## Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

## Lead Organization:

Munro and Associates

## Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

## Program Director:

Jason L Kessler

## Program Manager:

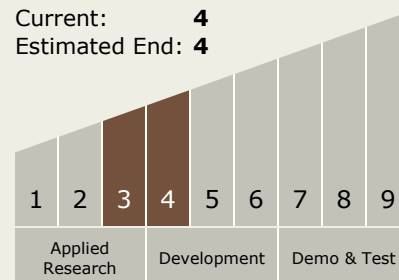
Carlos Torrez

## Principal Investigator:

Richard E Weiss

## Technology Maturity (TRL)

Start: 3  
Current: 4  
Estimated End: 4



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## Technology Areas

### Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - └ TX16.3 Traffic Management Concepts

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System